STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

August 28, 2020

VIA E-MAIL and U.S. MAIL

Mr. Jim Saric
Remedial Project Manager
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3511

Dear Mr. Jim Saric:

SUBJECT: Michigan Department of Environment, Great Lakes, and Energy (EGLE) comments on the Area 1 100% Sediment Remedial Design – Crown Vantage Side Channel (Report). Kalamazoo River Area 1, Operable Unit 5 (OU5) Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund site.

Enclosed are EGLE's detailed comments on the subject Report. EGLE performed a crosswalk between the Report and the 95-Percent Remedial Design Report comments that were originally authored by EGLE and provided by the United States Environmental Protection Agency (U.S. EPA) to Georgia-Pacific. Overall, EGLE believes the Report has adopted some of the comments that EGLE provided on the 95-Percent Remedial Design Report. However, a few of EGLE's comments appear to not have been addressed. EGLE did not evaluate whether comments provided by other reviewers (i.e. U.S. EPA) were addressed in the Report. EGLE recommends the U.S. EPA perform a crosswalk of their comments and the Report to determine if the comments provided on the 95-Percent Remedial Design Report were adequately addressed.

If you have any questions, please contact Mr. Daniel Peabody, Environmental Quality Analyst, Remediation and Redevelopment Division at 517-285-3924; PeabodyD@Michigan.gov; or EGLE, P.O, Box 30426, Lansing, Michigan 48909-7926

Sincerely,

Daniel Peabody
Environmental Quality Analyst
Remediation and Redevelopment Division

Enclosure
cc/enc: Dr. Keegan Roberts, CDM Smith
Mr. Theo Von Wallmenich, Jacobs
Ms. Megen Miller, Michigan Department of Attorney General
Mr. Mark Mills, MDNR
Ms. Sydney Ruhala, EGLE
Mr. Joe Walczak, EGLE

Kalamazoo River Superfund Site

Area 1 100% Sediment Remedial Design – Crown Vantage Side Channel

GENERAL COMMENTS
Commenting Organization: EGLE **Commenter:**

General Comment #1: Some of the comments provided by EGLE to the U.S. EPA and then to Respondents as formal comments on the 95-Percent Remedial Design Report were not addressed. Some of those comments have been re-inserted below.

1. The document references that several work plans and supporting documents will be developed by the Respondents as part of the remedial design (RD) and remedial action (RA) and states that the documents will be reviewed and approved by the Respondents Representative. This includes but is not limited to the following documents: Dredging Work Plan, Construction Work Plan, Dredge and Backfill Work Plan, Construction QA/QC Plan, etc. Please clarify whether the U.S. EPA, EGLE, and other stakeholders will have an opportunity to review and comment on these submittals.

   Furthermore, the document also states that "Backfill elevations will be verified via surveys performed by the Contractor in accordance with the Specifications and approved by the Respondents' Representative prior to considering work in a respective cell complete.". Please clarify the role(s) that U.S. EPA, EGLE, and other stakeholders will have in determining whether work is complete or not.

2. The following items must be considered and incorporated into the 100% design:
   1. The 100% CVSC Design Report (future submittal) should discuss how the SRI data and heterogeneous nature of PCB contamination in the side channel over time and space was
   considered in the design since the 95% Sediment Remedial Design - CVSC does not adequately describe how this data was utilized.
   2. Encountering the more coarse, underlying substrate within the side channel should not be used as the sole line of evidence to determine when dredging is complete. During remedial action, the dredge operators should be made aware of the unique conditions in the side channel and anticipate encountering the underlying, more-coarse substrate. But they should recognize that at least portions of the layer are known to be impacted by PCBs above the remedial goal of 1 mg/kg.
   3. The 3-foot dredge cut for DMU2 should be extended to at least cover the locations where SRI data showed impacts below 2-feet.
   4. Targeted removal of additional deeper soft sediments to account for greater soft sediment thicknesses than the proposed dredge cuts in DMU1 and DMU2, particularly near the edge of the channel. Variation in soft sediment thickness across the channel may not be as apparent in the PDI data due to the randomized sampling approach that was used but is clearly present in the transect based sampling and probing completed during the SRI.

3. Please ensure the Natural Resource Damage Trustees are copied on submittals so that they have an opportunity to provide comments. Although this comment was not specifically included in the U.S. EPA's comment letter, EGLE would appreciate coordination with the Natural Resource Trustees on future submittals.

The comments on the 95-Percent Remedial Design Report that were authored by the U.S. EPA should also be reviewed and compared to the text in the Final Design Report to make sure those comments were adequately addressed.

General Comment #2: EGLE continues to have significant concerns that the pre-design investigation (PDI) data may not be representative of the total polychlorinated biphenyl (PCB) concentration in the materials in the CVSC and the current conceptual site model described in the Area 1 100% Sediment Remedial Design – Crown Vantage Side Channel (Final Design Report) is significantly different than what was previously described by GP and paints a dramatically different picture of the pre-remedial action conditions.

The 2012 SRI states, "PCB concentrations in samples collected at sediment transect locations in 2000 (four focused samples) and 2007/2009 (189 samples) ranged from non-detect to 320 mg/kg (at CVT-07-01 [17-24 inches]) with a median PCB concentration of 5.2 mg/kg. PCB concentrations in approximately 19% (37 of 193) of sediment samples collected within the side channel were less than 1.0 mg/kg, while approximately 12% (23 of 193) exceeded 50 mg/kg PCB. All PCB concentrations greater than 50 mg/kg occurred in the subsurface intervals. PCBs are disproportionately located in areas where these fine-grained sediments have accumulated over time, particularly in the upper portion of the side channel between Transects CVT-08 (river mile 0.18) and CVT-05 (river mile 0.11)."

The 2018 PDI Report states, "Historical data collected in the Crown Vantage side channel indicated elevated sediment PCB concentrations at depths from the surface to greater than 24 inches throughout the side channel, particularly in the northern (downstream) portion (Figures 2-4f and 3-4f). Results from the PDI investigation indicate PCB concentrations below 1 mg/kg (including non-detects) for 89 of the 123 samples. The maximum PCB concentration is 45.1 mg/kg in Interval 3 at A1-SED-CV10. No 2017 sample in this area exceeded 50 mg/kg. The elevated PCB concentrations in the side channel is limited to the top 24 inches of sediment, except for location CV04 where elevated PCB concentrations extend to a depth of at least 33 inches (refusal)."

On page 1-2 of the Final Design Report, GP contends that "offsite PCB sources" may ultimately result in an ability to achieve remedial goals following dredging. If post-construction data shows that the remedy in Area 1 does not ultimately achieve clean-up goals in desired timeframes, EGLE believes GP's willingness to abandon and not properly consider "historic" data and their preferential use of soil and sediment data collected during the pre-design investigation that has been shown to be biased drastically low would be more likely culprits for remedy failure.

SPECIFIC COMMENTS
Commenting Organization: EGLE **Commenter:**

Section: 2.1.4 Permits **Page #:** 2-1
Specific Comment #1: The text states, "In accordance with CERCLA Section 121(e), permits are not required for on-site CERCLA response actions". While EGLE agrees that permits are not required for response actions, GP often performs work outside of what would be considered a "response action" under CERCLA (i.e. installation of monitoring devices in the river). EGLE expects GP to follow the State's permitting process(es) and laws where the CERCLA exemption does not apply.

Section: 4.2.1 Dredging Methodology **Page #:** 4-3
Specific Comment #2: General Comment #5 on the 95% Sediment Remedial Design – CVSC states, "The 95% Sediment Remedial Design – CVSC suggests using sheet-pile to block the upper and lower ends of the side channel and then complete the remediation "in the wet" using excavators. While excavation "in the dry" would require management of a larger volume of water it offers significantly more control over construction and EGLE believes the side channel conditions described in General Comment #2 are conducive to completing excavation "in the dry". The 95% Sediment Remedial Design – CVSC did not provide any information on why excavation "in the wet" was selected as the remedial strategy. Please provide additional information on why the decision was made to proceed with excavation "in the wet" versus "in the dry".

New text was inserted into Section 4.2.1 – Dredging Methodology of the Final Design Report which states, "Mechanical dredging in the wet was carried forward as the primary removal method and design basis for the site given the high precision and accuracy of the equipment specified and because it would produce a significantly smaller volume of water requiring treatment given the limited upland space available for staging the water treatment system".

The reasoning provided is not sufficient to conclude that dredging "in the wet" is the best option. First, the "high precision and accuracy of the equipment" would generally be the same whether excavation was completed "in the dry" or "in the wet". That is because the GPS, excavation equipment, and operators would be the same for both options. While the "smaller volume of water" presents a cost savings excavation "in the wet," it is technically challenging and potentially less efficient than excavation "in the dry". EGLE expected a discussion that compared excavation "in the wet" versus "in the dry" that centered around bigger picture concerns and benefits for each method. Georgia-Pacific has also expressed continued concern about the management of "dredge residuals" which would not be an issue if the excavation was done "in the dry". While excavation "in the dry" results in more water being generated, which can be costly, it does offer several benefits and site conditions appear to be conducive to this approach.

For example, excavation "in the dry" allows for a more complete and precise removal action since operators can visually observe their work; the Final Design Report already includes the installation of a waste water treatment plant (WWTP) and there appears to be significant space in the surrounding area and upland to install a larger WWTP or upgrade the proposed WWTP; dewatering helps facilitate accurate post-removal confirmation sampling and surveying; would aid in the removal of debris (i.e. fallen trees) prior to excavation; the proposed plan for excavation already includes the installation of sheet pile wall; dewatering eliminates the need to control dredge residuals and greatly reduces the likelihood of an uncontrolled releases of material if Best Management Practices (BMPs) are followed, and; there is an opportunity for excavation "in the dry" due to the unique hydrologic conditions at the upper and lower end of the CVSC. These considerations are especially important since the remedy is "hot spot" removal and >10% of the materials in the CVSC have total PCBs >50 mg/kg.

The text should have included a more robust analysis of the pros and cons of these two methods and done a better job demonstrating why excavation "in the wet" is the better option as proposed.

Section: 4.2.9 Backfill **Page #:** 4-8
Specific Comment #3: General Comment #5 on the 95% Sediment Remedial Design – CVSC

Text in Section 4.2.9 states, "Backfill material will be placed over dredged areas upon verification of sediment removal to the specified design elevations as described in the Drawings and Specifications. It is expected that backfill will be placed to pre-dredge elevations in DMU 2, and that backfill will be placed to 1 foot below pre-dredge elevations in DMU 1".

As previously stated, dredged areas should be backfilled to their original pre-dredge elevation. The document does not provide an adequate explanation for not backfilling to grade.

Section: 10.1 Turbidity Monitoring **Page #:** 10-1
Specific Comment #4: New text was inserted in the Final Design Report regarding turbidity monitoring that was not included in the 95% Sediment Remedial Design – CVSC. Section 10.1 of the Final Design Report states, "Turbidity monitoring will be conducted twice a day during active work hours. Readings will be collected at one upstream background location, and two downstream locations with a portable handheld multi-parameter water quality sampling instrument (YSI 600XL Multi-Probe System or equivalent. The methods and frequency proposed for turbidity monitoring are not adequate for the size and scope of the project. Dataloggers and telemetry devices to allow real-time turbidity monitoring should be used. Dredging practices should be adjusted and additional BMPs may need to be implemented if dredging practices result in unacceptable increases in turbidity.

Section: 10.3 Post-Dredging Verification **Page #:** 10-4
Specific Comment #5: Revise this section to also note some of the concerns raised by EGLE in its presentation, including:

- The PDI data used to define the dredge prisms was collected by Wood and analyzed by Pace. EGLE has consistently raised concerns about recent data quality. Recent empirical split sample results between EPA, EGLE, and Wood have confirmed these concerns and shown that Wood/Pace tPCB concentrations are consistently biased low compared to other analytical laboratories. Consequently, Pace is refining its tPCB analytical methods.
- By Wood's own admission during the work group call, the empirical evidence required for density-based mixing calculations was not collected during PDI sampling
- Wood's original proposal was to leave an entire DMU with a surface that averages 1-ft of potentially 10 ppm behind, when the target cleanup level is 1 ppm.

Section: Table 10-1 Post-Dredge Management Decision Tree Specific Exceptions **Page #:**
Specific Comment #6: A new table was inserted into the Final Design Report as part of the new dredging decision tree that was not included in the 95% Sediment Remedial Design – CVSC. Text in Table 10-1 describes that for a scenarios where the dredge encounters "High subgrade or hard bottom (coarse sand and gravel) within the dredge confirmation cell" that several actions will be taken, one of which is revising the confirmation sampling area to exclude the high subgrade or hard bottom area".

As previously mentioned, encountering the more coarse, underlying substrate within the side channel should not be used as the sole line of evidence to determine when dredging is complete. During remedial action, the dredge operators should be made aware of the unique conditions in the side channel and anticipate encountering the underlying, more-coarse substrate. But they should recognize that at least portions of the layer are known to be impacted by PCBs above the remedial goal of 1 mg/kg. Appendix I4 in the Area 1 SRI describes PCB contamination in the underlying subgrade and states, "Deeper than two feet, solids content generally increases, while organic carbon concentrations and silt and clay content decreases, indicative of finer material being deposited over coarser material. However, in sediments deeper than two feet, all PCB detections were greater than 2.9 mg/kg. These data are consistent

with the changes in the side channel from a regularly-flowing side channel to an area that only carries water during high-flow events".

Section: Appendix H Dredge Residuals Pilot Study Evaluation **Page #:**
Specific Comment #7: A new Appendix was inserted into the Final Design Report that outlines a pilot study to evaluate dredge residuals. EGLE notes that future submittals described in Appendix H - Dredge Residuals Pilot Study Evaluation should revisit standard field practices to ensure that the data being collected is representative. For example, cores are often cut near the top of the sediment and drained in the field before being transported to the lab for processing. The fine sediments of interest for this investigation would likely still be entrained in the water column for a long period of time following collection. That is just one possible example where standard operating procedures may need to be adjusted.

Section: Appendix H Dredge Residuals Pilot Study Evaluation **Page #:**
Specific Comment #8: A new Appendix was inserted into the Final Design Report that outlines a pilot study to evaluate dredge residuals. The Pilot Study text states, "Post-removal confirmation composite samples would be collected and analyzed in the 0 to 6 and 6 to 12-inch intervals and held for analysis in the event that a post-dredge confirmation sample exceeds 1 ppm in a dredge cell where the result is likely due to generated residuals". Based on the confirmation sampling scheme proposed (5-point composites from 0 to 12-inches over an area of 10,000 square feet), how will the conclusion be made that any exceedances observed are "likely due to generated residuals" and not the underlying, stable substrate?